AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims

1. (Previously Presented) A trans-fill system comprising:

an intensifier operable to increase pressure of therapeutic gas provided from an oxygen concentrator or other source of therapeutic gas, the intensifier creates a compressed therapeutic gas stream;

a conserver coupled to the compressed therapeutic gas stream, the conserver operable to deliver a bolus of therapeutic gas during inhalation of a patient; and

a cylinder connector operable to couple a portable cylinder to the compressed therapeutic gas stream;

wherein the trans-fill system is operable to provide therapeutic gas to the cylinder connector to fill the portable cylinder while providing therapeutic gas to the patient through the conserver.

2. (Previously Presented) The trans-fill system as defined in claim 1 further comprising:

a gas sense device fluidly coupled to the cylinder connector and receiving a portion of the therapeutic gas of the compressed therapeutic gas stream, the gas sense device operable to detect purity of therapeutic gas; and

wherein the trans-fill system is operable to allow a portion of the gas within a connected portable cylinder to flow to the gas sense device, and wherein the trans-fill system refrains from filling the connected portable cylinder if the purity of the gas in the bottle, as determined by the gas sense device, falls below a predetermined threshold.

3. (Original) The trans-fill system as defined in claim 2 wherein the gas sense device further comprises an oxygen-specific sensor.

4. (Original) The trans-fill system as defined in claim 2 wherein the gas sense device further comprises a density sensor.

5. (Original) The trans-fill system as defined in claim 4 wherein the gas sense device further comprises an oxygen-specific sensor.

6. (Previously Presented) A trans-fill system comprising:

an intensifier operable to increase pressure of therapeutic gas provided at an inlet of the intensifier to create a compressed therapeutic gas stream;

a conserver coupled to the compressed therapeutic gas stream, the conserver operable to deliver a bolus of therapeutic gas during inhalation of a patient; and

a cylinder connector operable to couple a portable cylinder to the compressed therapeutic gas stream;

a gas sense device fluidly coupled to the cylinder connector, the gas sense device operable to detect purity of therapeutic gas; and

a compressor coupled to the cylinder connector, the compressor operable to evacuate contents of the connected portable cylinder;

wherein the trans-fill system is operable to provide therapeutic gas to the cylinder connector to fill the portable cylinder while providing therapeutic gas to the patient through the conserver;

wherein the trans-fill system is operable to allow a portion of the gas within a connected portable cylinder to flow to the gas sense device, and wherein the trans-fill system refrains from filling the connected portable cylinder if the purity of the gas in the bottle, as determined by the gas sense device, falls below a predetermined threshold; and

wherein the compressor evacuates the connected portable cylinder if the purity detected by the gas sense device falls below the predetermined threshold.

7. (Original) The trans-fill system as defined in claim 6 further comprising:

an oxygen concentrator providing therapeutic gas to the intensifier; and

wherein the compressor is part of the oxygen concentrator.

8. (Original) The trans-fill system as defined in claim 6 wherein the connected portable cylinder is filled after evacuation.

9. (Previously Presented) A trans-fill system comprising:

an intensifier operable to increase pressure of therapeutic gas provided at an inlet of the intensifier to create a compressed therapeutic gas stream;

a conserver coupled to the compressed therapeutic gas stream, the conserver operable to deliver a bolus of therapeutic gas during inhalation of a patient; and

a cylinder connector operable to couple a portable cylinder to the compressed therapeutic gas stream;

wherein the trans-fill system is operable to provide therapeutic gas to the cylinder connector to fill the portable cylinder while providing therapeutic gas to the patient through the conserver;

a flow meter coupled on a regulated side to a patient port, and wherein when operating the flow meter provides a continuous flow of therapeutic gas to the patient by way of the patient port;

a valve coupled between a source of therapeutic gas and the intensifier, the valve selectively couples the source of therapeutic gas to only one of the flow meter and the intensifier; and

wherein the trans-fill system provides therapeutic gas to a patient by one of a continuous flow through the flow meter and the bolus delivered by the conserver.

10. (Original) The trans-fill system as defined in claim 9 further comprising:

a sense circuit mechanically coupled to the flow meter, the sense circuit operable to detect a flow setting of the flow meter; and

a controller electrically coupled to the sense circuit and the conserver;

wherein the controller is operable to set a bolus volume for delivery to the patient from the conserver based on the flow setting of the flow meter.

11. (Original) The trans-fill system as defined in claim 1 further comprising:
a cylinder coupled to the compressed therapeutic gas stream;
wherein the trans-fill system is operable to provide therapeutic gas from the cylinder when the intensifier is not in operation.

12. (Original) The trans-fill system as defined in claim 11 wherein the cylinder is a cylinder internal to the trans-fill system.

13. (Original) The trans-fill system as defined in claim 11 wherein the cylinder is external to the trans-fill system.

14. (Original) The trans-fill system as defined in claim 13 wherein the cylinder is a portable coupled to the cylinder connector.

15.-20. (Cancelled)

21. (Currently Amended) A method comprising:
testing gas within ~~the~~ a cylinder;
evacuating the contents of the cylinder if the gas within the cylinder contains contaminants;
compressing a stream of low-pressure therapeutic gas to form a compressed therapeutic gas stream;
providing a first portion of the compressed therapeutic gas stream to fill a cylinder; and
providing a second portion of the compressed therapeutic gas stream to a patient as a bolus of therapeutic gas.

22.-34. (Cancelled) The method as defined in claim 16 further comprising setting a volume of the bolus of therapeutic gas based on a sensed setting for a continuous flow of therapeutic gas through a flow meter.

35. (Previously Presented) An apparatus comprising:

an intensifier operable to take therapeutic gas at a first pressure and increase the pressure of the therapeutic gas to a second pressure, higher than the first pressure;

a fill port fluidly coupled to the therapeutic gas at the second pressure, the fill port operable to selectively couple a cylinder to be filled with therapeutic gas;

a gas sense device coupled to the fill port, the gas sense device operable to detect content of gas within the cylinder prior to filling;

a compressor coupled to the cylinder connector, the compressor operable to evacuate contents the cylinder; and

wherein the compressor evacuates the cylinder if the content of the gas within the cylinder detected by the gas sense device is not suitable for therapeutic use.

36. (Original) The apparatus as defined in claim 35 further comprising:

an oxygen concentrator providing therapeutic gas to the intensifier; and

wherein the compressor is part of the oxygen concentrator.

37. (Previously Presented) A system comprising:

a valve having an inlet port fluidly coupled to a source of therapeutic gas at a first pressure, the valve having a first outlet and a second outlet, and wherein the therapeutic gas may be selectively permitted to flow to only one of the first and second outlets;

an adjustable flow control device fluidly coupled to the first outlet, the adjustable flow control device operable to create a continuous flow of therapeutic gas at a selected flow rate;

an intensifier fluidly coupled to the second outlet, the intensifier operable to produce therapeutic gas at a second pressure higher than the first pressure;

a conserver fluidly coupled to the therapeutic gas at the second pressure, the conserver operable to release a bolus of therapeutic gas during a patient inhalation;

a patient outlet port fluidly coupled to the adjustable flow control device, and the patient outlet port also fluidly coupled to the conserver; and

wherein the volume of therapeutic gas released by the conserver is controlled by the selected flow rate of the adjustable flow device.

38. (Original) The system as defined in claim 37 further comprising:

a controller electrically coupled to the adjustable flow control device and the conserver; and

wherein the controller is operable to sense a flow rate setting of the adjustable flow control device, and wherein the controller is further operable to set volume of therapeutic gas released by the conserver based on the flow rate setting of the adjustable flow control device.

39.-45. (Cancelled)